U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

SEARCH REQUEST FORM

11-134

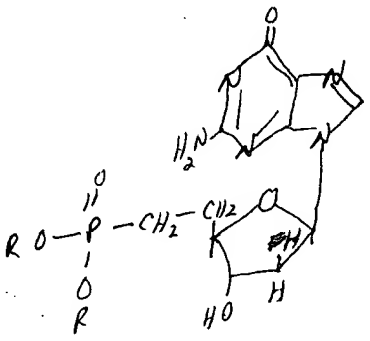
Requestor's Name: Gary L. Kunz USPTO Serial Number: 07/652,998

Date: 11-10-95 Phone: X4623 Art Unit: 1803

Search Topic:

Please write a detailed statement of search topic. Describe specifically as possible the subject matter to be searched. Define any terms that may have a special meaning. Give examples or relevant citations, authors keywords, etc., if known. For sequences, please attach a copy of the sequence. You may include a copy of the broadest and/or most relevant claim(s).

Please search:



R = H, phenyl, or alkyl (C_1-12)

FOR OFFICIAL USE ONLY

This is basically 2'-Deoxy-guanosine-5'-Triphosphate with a $-CH_2-$ replacing the 5'-oxygen

Pull Case Immediately

STAFF USE ONLY

Date completed: 10/13/95
Searcher: _____
Terminal time: 40
Elapsed time: _____
CPU time: _____
Total time: 50
Number of Searches: 1 + sub
Number of Databases: 5

Search Site
- ____ STIC
- L CM-1
- ____ Pre-S

Type of Search
- ____ N.A. Sequence
- ____ A.A. Sequence
- ✓ Structure
- ____ Bibliographic

Vendors
- ____ IG Suite
- ✓ STN
- ____ Dialog
- ____ APS
- ____ Geninfo
- ____ SDC
- ____ DARC/Questel
- ____ Other

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=> fil reg
FILE 'REGISTRY' ENTERED AT 11:54:50 ON 13 NOV 95
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT
COPYRIGHT (C) 1995 American Chemical Society (ACS)

STRUCTURE FILE UPDATES:  10 NOV 95   HIGHEST RN 170078-12-3
DICTIONARY FILE UPDATES: 12 NOV 95   HIGHEST RN 170078-12-3

TSCA INFORMATION NOW CURRENT THROUGH JUNE 1995

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.


=> d stat que l9
L1                STR
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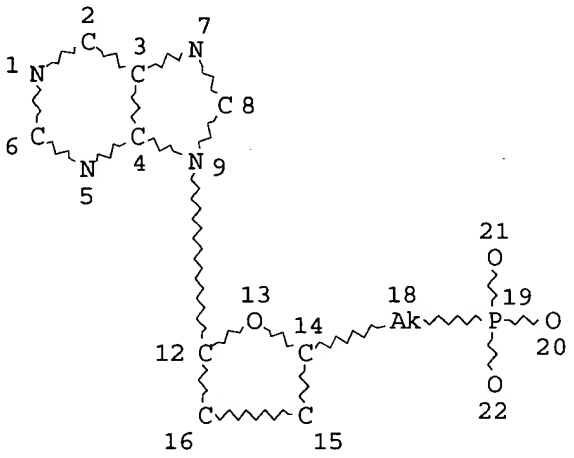


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NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  19

STEREO ATTRIBUTES: NONE
L2             196 SEA FILE=REGISTRY SSS FUL L1
L4                 STR
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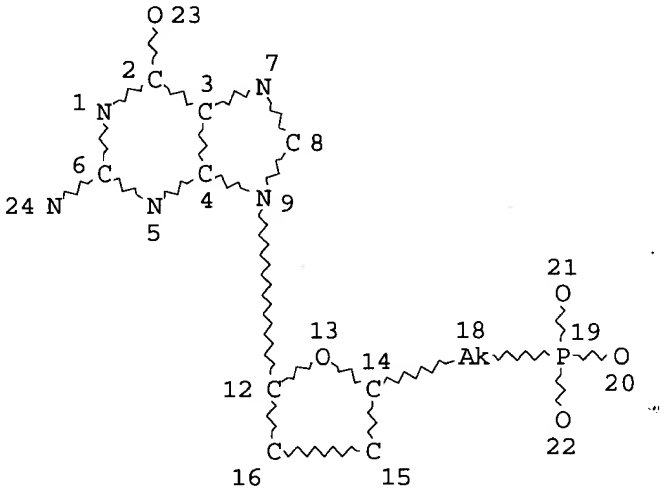


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DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED
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GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 21

STEREO ATTRIBUTES: NONE
L5 23 SEA FILE=REGISTRY SUB=L2 SSS FUL L4
L6 3 SEA FILE=REGISTRY L5 AND (C25H28N5O7P OR C11H16N5O6P OR C 11H16N5O7P)/MF
L7 2 SEA FILE=REGISTRY 144822-55-9/CRN OR 117544-95-3/CRN OR 1 17513-96-9/CRN
L8 1 SEA FILE=REGISTRY L5 AND "C12H18N5O6P.NA"/MF
L9 6 SEA FILE=REGISTRY L6 OR L7 OR L8

=> d his l9-

(FILE 'REGISTRY' ENTERED AT 11:35:43 ON 13 NOV 95)
L9 6 S L6 OR L7 OR L8

FILE 'HCAOLD' ENTERED AT 11:54:36 ON 13 NOV 95
L10 0 S L9

FILE 'HCAPLUS' ENTERED AT 11:54:42 ON 13 NOV 95
L11 2 S L9 OR L9/D

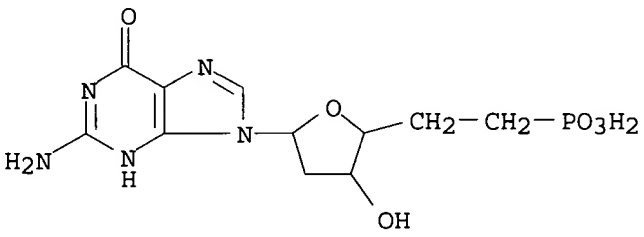
FILE 'REGISTRY' ENTERED AT 11:54:50 ON 13 NOV 95

=> d ide can l9 1-6

L9 ANSWER 1 OF 6 REGISTRY COPYRIGHT 1995 ACS
RN 144822-56-0 REGISTRY
CN 6H-Purin-6-one, 2-amino-1,9-dihydro-9-(2,5,6-trideoxy-6-phosphono-.beta.-D-erythro-hexofuranosyl)-, monosodium salt, compd. with N,N-diethylethanamine (1:1) (9CI) (CA INDEX NAME)
MF C11 H16 N5 O6 P . C6 H15 N . Na
SR CA
LC STN Files: CA, CAPLUS

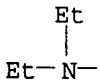
CM 1

CRN 144822-55-9
CMF C11 H16 N5 O6 P
CDES 5:B-D-ERYTHRO



CM 2

CRN 121-44-8
CMF C6 H15 N

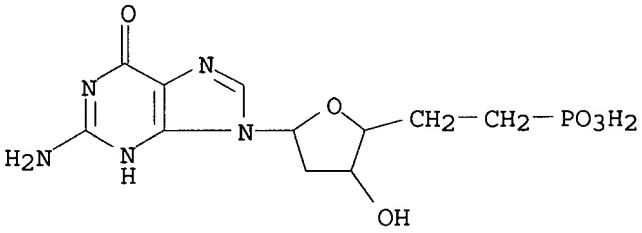


1 REFERENCES IN FILE CA (1967 TO DATE)

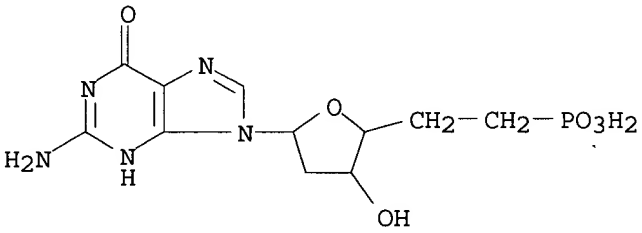
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 118:7326

L9 ANSWER 2 OF 6 REGISTRY COPYRIGHT 1995 ACS
RN 144822-55-9 REGISTRY
CN 6H-Purin-6-one, 2-amino-1,9-dihydro-9-(2,5,6-trideoxy-6-phosphono-.beta.-D-erythro-hexofuranosyl)- (9CI) (CA INDEX NAME)
MF **C11 H16 N5 O6 P**
CI COM
SR CA
DES 5:B-D-ERYTHRO



L9 ANSWER 3 OF 6 REGISTRY COPYRIGHT 1995 ACS
RN 144822-54-8 REGISTRY
CN 6H-Purin-6-one, 2-amino-1,9-dihydro-9-(2,5,6-trideoxy-6-phosphono-.beta.-D-erythro-hexofuranosyl)-, disodium salt (9CI) (CA INDEX NAME)
MF C11 H16 N5 O6 P . 2 Na
SR CA
LC STN Files: CA, CAPLUS
DES 5:B-D-ERYTHRO
CRN (144822-55-9)

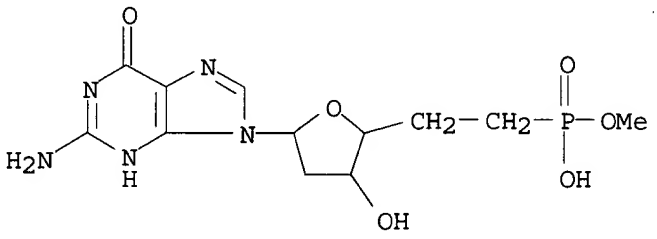


●2 Na

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 118:7326

L9 ANSWER 4 OF 6 REGISTRY COPYRIGHT 1995 ACS
RN 144822-53-7 REGISTRY
CN 6H-Purin-6-one, 2-amino-1,9-dihydro-9-[2,5,6-trideoxy-6-(hydroxymethoxyphosphinyl)-.beta.-D-erythro-hexofuranosyl]-, monosodium salt (9CI) (CA INDEX NAME)
MF **C12 H18 N5 O6 P . Na**
SR CA
LC STN Files: CA, CAPLUS
DES 5:B-D-ERYTHRO

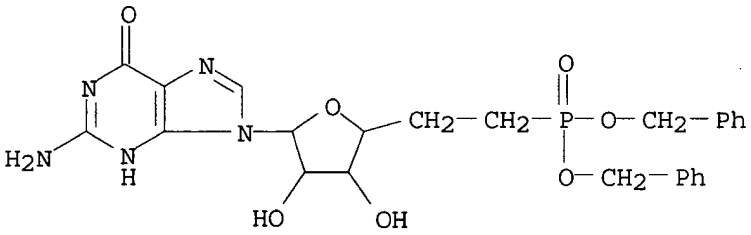


● Na

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 118:7326

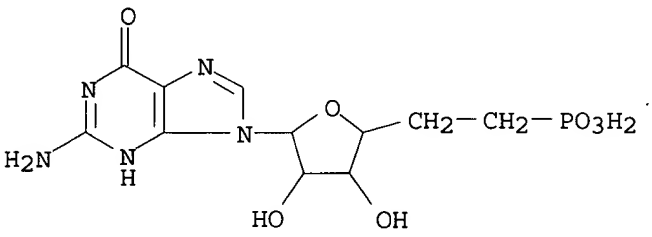
L9 ANSWER 5 OF 6 REGISTRY COPYRIGHT 1995 ACS
RN 117544-95-3 REGISTRY
CN 6H-Purin-6-one, 2-amino-9-[6-[bis(phenylmethoxy)phosphinyl]-5,6-dideoxy-.beta.-D-ribo-hexofuranosyl]-1,9-dihydro- (9CI) (CA INDEX NAME)
MF **C25 H28 N5 O7 P**
SR CA
LC STN Files: CA, CAPLUS, CASREACT
DES 5:B-D-RIBO



1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 109:231447

L9 ANSWER 6 OF 6 REGISTRY COPYRIGHT 1995 ACS
RN 117513-96-9 REGISTRY
CN 6H-Purin-6-one, 2-amino-9-(5,6-dideoxy-6-phosphono-.beta.-D-ribo-hexofuranosyl)-1,9-dihydro- (9CI) (CA INDEX NAME)
MF **C11 H16 N5 O7 P**
SR CA
LC STN Files: CA, CAPLUS, CASREACT
DES 5:B-D-RIBO



1 REFERENCES IN FILE CA (1967 TO DATE)

1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 109:231447

=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 11:55:12 ON 13 NOV 95

FILE COVERS 1967 - 13 Nov 1995 VOL 123 ISS 20
FILE LAST UPDATED: 11 Nov 1995 (951111/ED)

Roles are now available from 1967 to date.

=> d l11 1-2 all

L11 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 1995 ACS
AN 1993:7326 HCAPLUS
DN 118:7326
TI Methylenephosphonate nucleoside analogs and oligonucleotide analogs made therefrom
IN Buhr, Chris; Matteucci, Mark; Bischofberger, Norbert W.; Froehler, Brian
PA Gilead Sciences, Inc., USA
SO PCT Int. Appl., 77 pp.
CODEN: PIXXD2
PI WO 9213869 A1 920820
DS W: AU, CA, FI, JP, KR, NO, RU
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE
AI WO 92-US1020 920207
PRAI US 91-652978 910208
DT Patent
LA English
IC ICM C07H019-20
ICS C07H019-10; A61K048-00; A61K031-675
CC 33-9 (Carbohydrates)
OS MARPAT 118:7326
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Nucleoside phosphonates I [B = purine or pyrimidine nucleic acid base; R, R1 = (un)substituted OH, NH2, SH; R2 = H, allyloxy, allylthio, MeO, MeS, F; R3 = H, OH, F, OCH2Ph, OSiMe2CMe3, OCPh(C6H4OMe-4)2, OCPh2C6H4OMe-4; R2R3 = O, bond; X = O, S] were prepd. as intermediates for oligonucleotide analogs II (R4, R5 = H, protective group; n = 1-30). Thus, 3'-O-tert-butyldimethylsilyl-N2-isobutyryl-2'-deoxyguanosine was prepd. from 2'-deoxyguanosine in 3 steps and was treated with Ph3P:CHP(O)(OPh)2 followed by hydrogenation to give the phosphonate III.
ST nucleoside methylphosphonate; ribohexofuranosylmethylphosphonate purine pyrimidine
IT Nucleotides, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(5'-deoxy-5'-(phosphonomethyl) analogs, prepn. of)
IT Nucleotides, polymers
RL: SPN (Synthetic preparation); PREP (Preparation)
(oligo-, methylphosphonate-linked, prepn. of)
IT 961-07-9, 2'-Deoxyguanosine
RL: RCT (Reactant)
(acylation of)
IT 951-77-9, 2'-Deoxycytidine
RL: RCT (Reactant)
(benzoylation of)
IT 50-89-5, Thymidine, reactions 69256-17-3
RL: RCT (Reactant)

(dimethoxytritylation of)
IT 144822-44-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and debenzylation of)
IT 144822-69-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and deblocking of)
IT 144822-39-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and desilylation of)
IT 4836-13-9P 68892-42-2P 69123-94-0P 144822-72-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and dimethoxytritylation of)
IT 144822-52-6P **144822-53-7P** 144822-57-1P 144822-58-2P
144822-60-6P 144822-61-7P 144822-67-3P 144822-71-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and ester hydrolysis of)
IT 51549-37-2P 144822-37-7P 144822-49-1P 144822-64-0P
144822-74-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and reaction of, with phosphoranylidenemethylphosphonate)
IT 144822-38-8P 144822-40-2P 144822-42-4P 144822-50-4P
144822-65-1P 144822-75-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and redn. of)
IT 67219-55-0P 68892-41-1P 144822-48-0P 144822-63-9P
144822-73-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and silylation of)
IT 144822-41-3P 144822-43-5P 144822-51-5P 144822-66-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and transesterification of)
IT 99540-94-0P 144822-45-7P 144822-46-8P 144822-47-9P
144822-54-8P 144822-56-0P 144822-59-3P
144822-62-8P 144822-68-4P 144822-76-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)
IT 40615-39-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn., benzoylation, and detritylation of)
IT 22400-41-5
RL: RCT (Reactant)
(reaction of, with protected nucleosides)

L11 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 1995 ACS
AN 1988:631447 HCAPLUS
DN 109:231447
TI Synthesis of 4'-(hydroxymethyl)guanosine and a phosphonate analog of guanylic acid
AU Martin, John C.; Verheyden, Julien P. H.
CS Syntex Res., Palo Alto, CA, 94304, USA
SO Nucleosides Nucleotides (1988), 7(3), 365-74
CODEN: NUNUD5; ISSN: 0732-8311
DT Journal
LA English
CC 33-9 (Carbohydrates)
Section cross-reference(s): 1, 10
OS CASREACT 109:231447
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The synthesis of 4'-(hydroxymethyl)guanosine (I) and the phosphonate analog II of guanylic acid proceed from a common intermediate, 2',3'-O-isopropylidene-N2-(monomethoxytrityl)-guanosine-5'-aldehyde (III). I and II were found inactive when tested in vitro against

herpes simplex virus types 1 and 2, parainfluenza 3, and respiratory syncytial virus.
ST hydroxymethylguanosine prepn virucide; guanylic acid phosphonate analog
IT Virucides and Virustats
((hydroxymethyl)guanosine and guanylic acid phosphonate analog, inactive)
IT 52417-04-6
RL: RCT (Reactant)
(monomethoxytritylation followed by deacetylation of)
IT **117544-95-3P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and debenzylation of)
IT 117513-88-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and deprotection of)
IT 117513-95-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and detritylation of)
IT 117513-86-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and oxidn. of)
IT 117513-87-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and reaction of, with paraformaldehyde)
IT 117513-93-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and redn. of)
IT 117513-94-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and transesterification of, with sodium benzyl oxide)
IT 85-32-5DP, Guanylic acid, phosphonate analog 117513-89-0P
117513-90-3P 117513-91-4P **117513-96-9P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)
IT 117513-92-5
RL: RCT (Reactant)
(reaction of, with guanosine aldehyde deriv.)

=> fil uspatful
FILE 'USPATFULL' ENTERED AT 11:55:25 ON 13 NOV 95
CA INDEXING COPYRIGHT (C) 1995 AMERICAN CHEMICAL SOCIETY (ACS)

FILE COVERS 1971 TO PATENT PUBLICATION DATE: 7 Nov 1995 (19951107/PD)
FILE LAST UPDATED: 8 Nov 1995 (951108/ED)
HIGHEST PATENT NUMBER: US5465422
CA INDEXING IS CURRENT THROUGH 8 Nov 1995 (951108/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 7 Nov 1995 (19951107/PD)
REVISED CLASS FIELDS (/NCL) CURRENT THROUGH: AUG 1995
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: APR 1995

>>> Page images are available for patents from 1/1/93. <<<

>>> Complete CA file indexing for chemical patents (or equivalents) <<<
>>> is included in file records. A thesaurus is available for the <<<
>>> USPTO Manual of Classifications in the /NCL, /INCL, and /RPCL <<<
>>> fields, and for the WIPO International Patent Classifications <<<
>>> (IPC) in the /IC field.

=> s l9 or l9/d
0 L9
0 L9/D
L12 0 L9 OR L9/D